

REMARKS/ARGUMENTS

In response to the Office Action dated June 3, 2004, please consider the following remarks.

In the Office Action issued June 3, 2004, claims 23-30, 53-60, 83-90, and 113-120 were rejected under 35 U.S.C. §102(e) as being anticipated by Weiss et al., U.S. Patent No. 6,460,037 ("Weiss "). Claims 13-22, 43-52, 73-82, and 103-112 were rejected under 35 U.S.C. §103(a) as being unpatentable over Weiss in view of Thearling, U.S. Patent No., 6,240,411 ("Thearling"). Claims 1, 3-12, 31, 33-42, 61, 63-72, and 91, 93-102 were objected to as being dependent upon a rejected base claim, but were indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1, 3-31, 33-61, 63-91, and 93-120 are now pending in this application.

The present invention, according to claims 13-30, 43-60, 73-90, and 103-120 is not anticipated by, nor obvious in view of, the references relied upon in the Office Action, as these prior art references do not disclose or suggest the claimed features of the present invention.

The Applicant respectfully submits that the present invention according to claims 23, 53, 83, and 113 is not anticipated by Weiss.

Weiss discloses an agent-based networking system and process for building a data warehouse containing application specific information and for mining data therefrom. The networking system utilizes functional and resource agents to communicate with distributed databases in order to collect pertinent data. The agents employ multiple

strategies for identifying and resolving potential ambiguities involving information gathered by the process.

By contrast, the present invention is directed to a method, system, and computer program product for allocating data mining processing tasks that does not use complex internal schemes, yet results in better performance than is possible with general-purpose operating system based schemes.

Claim 13 recites determining that a processing load in the computer system is high relative to at least one other computer system, the processing load based on a processor utilization of the computer system due to tasks being executed by the computer system. Weiss discloses a network of functional agents that process goals and resource agents that communicate with databases. Distribution of data among the agents is handled by mirroring the physical distribution of data in the organization in a network of agents, comprising functional agents that execute the workflows required for the storage, selection, cleaning and an updating of data; user agents to represent the human workers that initiate and participate in the workflow; and resource agents that interact with the databases through the database-specific Weiss does not disclose or suggest determining that a processing load in the computer system is high relative to at least one other computer system, nor does Weiss disclose or suggest that the processing load is based on a processor utilization of the computer system due to tasks being executed by the computer system. None of this disclosure teaches anything about determining processing load on any computer systems or comparing processing load among computer systems. Weiss does not disclose or suggest this recited step.

Claim 23 recites determining a remaining cost of completing processing of a data mining processing task being processed by the computer system. Weiss does not disclose or suggest anything about determining the cost of completing processing. Rather, Weiss discloses setting priorities of data mining tasks based on which tasks are more important. This provides no disclosure or suggestion of determining a cost or remaining cost of completing a data mining task.

Claim 23 recites determining whether the at least one other computer system can complete processing of the data mining processing task at a lower cost than the computer system. Weiss does not disclose or suggest this recited step. Rather, Weiss discloses that each agent adapter KS provides a mechanism to send a goal to another agent over which this agent has a usage right. This is triggered when an outgoing goal is posted to the blackboard by one of the process KSs. Thus, Weiss discloses passing tasks among agents based on explicit triggers posted by particular agents. This provides no disclosure or suggestion of determining whether a computer system can complete processing at a lower cost than another computer system.

Claim 23 recites the step of: if the at least one other computer system can complete processing of the data mining processing task at a lower cost than the computer system, migrating processing of the data mining processing task to the at least one computer system. Weiss discloses passing goals among agents and matching human agents with incoming calls based on explicit triggers and information about the most appropriate match. This provides no disclosure or suggestion of using the cost of processing for any purpose, including to migrate tasks.

Thus, the present invention, according to claim 23, and according to claims 53, 83 and 113, which are similar to claim 23, is not anticipated by Weiss. Likewise, the present invention, according to claims 24-30, 54-60 84-90, and 114-120, which depend from claims 23, 53, 83, and 113, respectively, is not anticipated by Weiss.

The Applicant respectfully submits that the present invention according to claims 24, 54, 84, and 114 is not anticipated by Weiss for at least the following additional reasons:

Claim 24 recites determining a processor utilization of the computer system and determining a processor utilization of the at least one other computer system. Weiss does not disclose or suggest determining a processor utilization of a computer system. Weiss discloses determining usage rights defining an agent may perform on another together with capacity and quality of service constraints. While, in some cases a capacity constraint may in some way have something to do with utilization of a computer system, such a relationship is not disclosed or suggested by Weiss. Further, Weiss does not disclose or suggest an agent obtaining its own usage rights. Thus, Weiss does not disclose or suggest determining a processor utilization of the computer system and determining a processor utilization of the at least one other computer system.

Claim 24 recites determining that the processor utilization of the computer system is greater than a predefined amount higher than the processor utilization of the at least one other computer system. Weiss does not disclose or suggest this recited step. Weiss discloses determining usage rights. This provides no disclosure or suggestion of determining that the processor utilization of the computer system is greater than a

predefined amount higher than the processor utilization of the at least one other computer system.

Thus, the present invention, according to claim 24, and according to claims 54, 84 and 114, which are similar to claim 24, is not anticipated by Weiss. Likewise, the present invention, according to claims 25-30, 55-60 85-90, and 115-120, which depend from claims 24, 54, 84, and 114, respectively, is not anticipated by Weiss.

The Applicant respectfully submits that the present invention according to claims 25, 55, 85, and 115 is not anticipated by Weiss for at least the following additional reasons:

Claim 25 recites that the remaining cost of completing processing of a data mining processing task is determined based on a time to complete processing of the data mining processing task. Weiss does not disclose or suggest determining a cost of completing processing or a time to complete processing. Weiss simply states that data mining that is performed after a data warehouse is created is a time-consuming process. This provides no disclosure of this required element.

Thus, the present invention, according to claim 25, and according to claims 55, 85 and 115, which are similar to claim 25, is not anticipated by Weiss. Likewise, the present invention, according to claims 26-30, 56-60 86-90, and 116-120, which depend from claims 25, 55, 85, and 115, respectively, is not anticipated by Weiss.

The Applicant respectfully submits that the present invention according to claims 26, 56, 86, and 116 is not anticipated by Weiss for at least the following additional reasons:

Claim 26 recites that the remaining cost of completing processing of a data mining processing task is determined based on a time to complete processing of the data mining processing task and on additional factors, including actual costs of use of the computer system. Weiss does not disclose or suggest determining a cost of completing processing, a time to complete processing, or a cost of use of a computer system. Weiss simply states that data mining that is performed after a data warehouse is created is a time-consuming process. This provides no disclosure of this required element.

Thus, the present invention, according to claim 26, and according to claims 56, 86, and 116, which are similar to claim 26, is not anticipated by Weiss. Likewise, the present invention, according to claims 27-30, 57-60 87-90, and 117-120, which depend from claims 26, 56, 86, and 116, respectively, is not anticipated by Weiss.

The Applicant respectfully submits that the present invention according to claims 27, 57, 87, and 117 is not anticipated by Weiss for at least the following additional reasons:

Claim 27 recites estimating an amount of processing that must be performed to complete the data mining processing task, estimating a processor utilization that will be available to process the data mining processing task, and estimating a time to complete the data mining processing task based on the estimate of the amount of processing that must be performed, the estimate of available processor utilization, and a speed of the processor. Weiss does not disclose or suggest estimating any of these things. Weiss simply states that data mining that is performed after a data warehouse is created is a

time-consuming process and describes the processing steps needed in order to handle distribution of data among agents. This provides no disclosure of this required element.

Thus, the present invention, according to claim 27, and according to claims 57, 87, and 117, which are similar to claim 27, is not anticipated by Weiss. Likewise, the present invention, according to claims 28-30, 58-60 88-90, and 118-120, which depend from claims 27, 57, 87, and 117, respectively, is not anticipated by Weiss.

The Applicant respectfully submits that the present invention according to claims 28, 58, 88, and 118 is not anticipated by Weiss for at least the following additional reasons:

Claim 28 recites estimating additional factors, including actual costs of use of the computer system. Weiss does not disclose or suggest this. Weiss simply states that data mining that is performed after a data warehouse is created is a time-consuming process and describes the processing steps needed in order to handle distribution of data among agents. This provides no disclosure of this required element.

Thus, the present invention, according to claim 28, and according to claims 58, 88, and 118, which are similar to claim 28, is not anticipated by Weiss. Likewise, the present invention, according to claims 29-30, 59-60 89-90, and 119-120, which depend from claims 28, 58, 88, and 118, respectively, is not anticipated by Weiss.

The Applicant respectfully submits that the present invention according to claims 29, 59, 89, and 119 is not anticipated by Weiss for at least the following additional reasons:

Claim 29 recites soliciting a bid for completing processing of the data mining processing task from the at least one other computer system. Weiss does not disclose or suggest this. Weiss simply states that in an agent-based approach to data mining, required portions of the data warehouse can be created on demand, and can be used for data mining immediately. This provides no disclosure of this required element.

Thus, the present invention, according to claim 29, and according to claims 59, 89, and 119, which are similar to claim 29, is not anticipated by Weiss. Likewise, the present invention, according to claims 30, 60 90, and 120, which depend from claims 29, 59, 89, and 119, respectively, is not anticipated by Weiss.

The Applicant respectfully submits that the present invention according to claims 30, 60, 90, and 120 is not anticipated by Weiss for at least the following additional reasons:

Claim 30 recites transmitting a request for a bid to the at least one other computer system, the request for the bid including information relating to the amount of processing that must be performed to complete the data mining processing task and receiving a bid from the at least one other computer system, the bid including an estimate of a cost of completing processing of the data mining processing task on the at least one other computer system. Weiss does not disclose or suggest this. Weiss simply states that in an agent-based approach to data mining, required portions of the data warehouse can be created on demand, and can be used for data mining immediately. This provides no disclosure of this required element.

Thus, the present invention, according to claim 30, and according to claims 60, 90, and 120, which are similar to claim 30, is not anticipated by Weiss.

The Applicant respectfully submits that the present invention according to claims 13, 43, 73, and 103 are not obvious over Weiss in view of Thearling. Even if Weiss and Thearling were combined as suggested by the Examiner, the result still would not be the present invention as claimed.

For example, claim 13 recites determining that the computer system is overloaded due to tasks being executed by the computer system and causing degradation in performance of processing at least one task. Weiss discloses that strategies for identifying and resolving ambiguities are executed in knowledge sources which communicate using a blackboard system. The ambiguity to which Weiss refers is ambiguity in data, and is unrelated to the overloading and performance of processing tasks in a computer system. For example, Weiss discloses that ambiguity is handled by employing multiple strategies in one agent for identifying and resolving ambiguities. These are strategies such as “compare names for similar spelling”, “cluster persons with the same address” for the identification of ambiguities and strategies such as “if two people have similar spelling and the same address they are very likely identical” for the resolution of ambiguities. Thus, Weiss provides no disclosure or suggestion of this required element. In addition, Thearling does not disclose or suggest this. Thus, the combination of Weiss and Thearling still fails to disclose this required element.

Claim 13 recites querying at least one other computer system to determine whether the at least one other computer system can complete a data mining processing task being

performed on the computer system faster than the computer system. As the Examiner states, Weiss provides no disclosure or suggestion of this required element. Thearling discloses general query processing in a database or data mining system. However, Thearling does not disclose a query relating to whether a computer system can complete a data mining task faster than another computer system. Thus, the combination of Weiss and Thearling still fails to disclose this required element.

Claim 13 recites determining whether the at least one other computer system can complete the data mining processing task being performed on the computer system faster than the computer system. Weiss does not disclose or suggest this recited step. Rather, Weiss discloses that each agent adapter KS provides a mechanism to send a goal to another agent over which this agent has a usage right. This is triggered when an outgoing goal is posted to the blackboard by one of the process KSs. Thus, Weiss discloses passing tasks among agents based on explicit triggers posted by particular agents. This provides no disclosure or suggestion of determining whether a computer system can complete processing faster than another computer system. In addition, Thearling does not disclose or suggest this. Thus, the combination of Weiss and Thearling still fails to disclose this required element.

Claim 13 recites if the at least one other computer system can complete the data mining processing task faster than the computer system, migrating the processing from the computer system to the at least one other computer system. Weiss discloses passing goals among agents and matching human agents with incoming calls based on explicit triggers and information about the most appropriate match. This provides no disclosure or

suggestion of using the speed of processing for any purpose, including to migrate tasks. In addition, Thearling does not disclose or suggest this. Thus, the combination of Weiss and Thearling still fails to disclose this required element.

Thus, the present invention, according to claim 13, and according to claims 43, 73 and 103, which are similar to claim 13, is not obvious over Weiss in view of Thearling. Likewise, the present invention, according to claims 14-22, 44-52, 74-82, and 104-112, which depend from claims 13, 43, 73, and 103, respectively, is not obvious over Weiss in view of Thearling.

The Applicant respectfully submits that the present invention according to claims 14, 44, 74, and 104 is not obvious over Weiss in view of Thearling for at least the following additional reasons:

Claim 14 recites reserving the at least one other computer system for migration. Weiss discloses a plurality of resource agents, each associated with one of the distributed databases, for receiving and storing goals from the functional agents and obtaining application specific data from appropriate databases for use by the user agent. Weiss does not disclose or suggest migration of a processing task to another computer system; nor does Weiss disclose or suggest reserving such a computer system for migration. In addition, Thearling does not disclose or suggest this. Thus, the combination of Weiss and Thearling still fails to disclose or suggest this required element.

Claim 14 recites interrupting and checkpointing the data mining processing task on the computer system. Neither Weiss nor Thearling, nor the combination of Weiss and

Thearling discloses or suggests checkpointing. Thus, the combination of Weiss and Thearling still fails to disclose or suggest this required element.

Claim 14 recites enqueueing a request to the at least one other computer system for continued processing of the data mining processing task. Neither Weiss nor Thearling, nor the combination of Weiss and Thearling discloses or suggests enqueueing a request to the at least one other computer system for continued processing of the data mining processing task. Thus, the combination of Weiss and Thearling still fails to disclose or suggest this required element.

Thus, the present invention, according to claim 14, and according to claims 44, 74, and 104, which are similar to claim 14, is not obvious over Weiss in view of Thearling. Likewise, the present invention, according to claims 15-22, 45-52, 75-82, and 105-112, which depend from claims 14, 44, 74, and 104, respectively, is not obvious over Weiss in view of Thearling.

The Applicant respectfully submits that the present invention according to claims 15, 45, 75, and 105 is not obvious over Weiss in view of Thearling for at least the following additional reasons:

Claim 15 recites determining that the computer system is overloaded if a utilization of a processor of the computer system is greater than a predefined threshold for a predefined time. Neither Weiss nor Thearling discloses or suggests determining that the computer system is overloaded if a utilization of a processor of the computer system is greater than a predefined threshold for a predefined time. Weiss simply states that data mining that is performed after a data warehouse is created is a time-consuming process.

This provides no disclosure of this required element. Thus, the combination of Weiss and Thearling still fails to disclose or suggest this required element.

Thus, the present invention, according to claim 15, and according to claims 45, 75, and 105, which are similar to claim 15, is not obvious over Weiss in view of Thearling. Likewise, the present invention, according to claims 15-22, 45-52, 75-82, and 105-112, which depend from claims 15, 45, 75, and 105, respectively, is not obvious over Weiss in view of Thearling.

The Applicant respectfully submits that the present invention according to claims 16, 46, 76, and 106 is not obvious over Weiss in view of Thearling for at least the following additional reasons:

Claim 16 recites generating an estimate of a time to complete the data mining processing task. Neither Weiss nor Thearling discloses or suggests generating an estimate of a time to complete the data mining processing task. Weiss simply states that data mining that is performed after a data warehouse is created is a time-consuming process. This provides no disclosure of this required element. Thus, the combination of Weiss and Thearling still fails to disclose or suggest this required element.

Thus, the present invention, according to claim 16, and according to claims 46, 76, and 106, which are similar to claim 16, is not obvious over Weiss in view of Thearling. Likewise, the present invention, according to claims 17-22, 47-52, 77-82, and 107-112, which depend from claims 16, 46, 76, and 106, respectively, is not obvious over Weiss in view of Thearling.

The Applicant respectfully submits that the present invention according to claims 17, 47, 77, and 107 is not obvious over Weiss in view of Thearling for at least the following additional reasons:

Claim 17 recites estimating an amount of processing that must be performed to complete the data mining processing task, estimating a processor utilization that will be available to process the data mining processing task, and estimating a time to complete the data mining processing task based on the estimate of the amount of processing that must be performed, the estimate of available processor utilization, and a speed of the processor. Weiss simply states that data mining that is performed after a data warehouse is created is a time-consuming process. This provides no disclosure of this required element. In addition, Thearling does not disclose or suggest this. Thus, the combination of Weiss and Thearling still fails to disclose or suggest this required element.

Thus, the present invention, according to claim 17, and according to claims 47, 77, and 107, which are similar to claim 17, is not obvious over Weiss in view of Thearling. Likewise, the present invention, according to claims 18-22, 48-52, 78-82, and 108-112, which depend from claims 17, 47, 77, and 107, respectively, is not obvious over Weiss in view of Thearling.

The Applicant respectfully submits that the present invention according to claims 18, 48, 78, and 108 is not obvious over Weiss in view of Thearling for at least the following additional reasons:

Claim 18 recites requesting information from the at least one other computer system, the information including a speed of the at least one other computer system and

an estimate of processor utilization of the at least one other computer system. Neither Weiss nor Thearling discloses or suggests this required element. Thus, the combination of Weiss and Thearling still fails to disclose or suggest this required element.

Thus, the present invention, according to claim 18, and according to claims 48, 78, and 108, which are similar to claim 18, is not obvious over Weiss in view of Thearling. Likewise, the present invention, according to claims 19-22, 49-52, 79-82, and 109-112, which depend from claims 18, 48, 78, and 108, respectively, is not obvious over Weiss in view of Thearling.

The Applicant respectfully submits that the present invention according to claims 19, 49, 79, and 109 is not obvious over Weiss in view of Thearling for at least the following additional reasons:

Claim 19 recites estimating a time to complete the data mining processing task for the at least one other computer system based on the estimate of the amount of processing that must be performed to complete the data mining processing task, the speed of the at least one other computer system and the estimate of processor utilization of the at least one other computer system. Neither Weiss nor Thearling discloses or suggests this required element. Thus, the combination of Weiss and Thearling still fails to disclose or suggest this required element.

Thus, the present invention, according to claim 19, and according to claims 49, 79, and 109, which are similar to claim 19, is not obvious over Weiss in view of Thearling. Likewise, the present invention, according to claims 20-22, 50-52, 80-82, and 110-112,

which depend from claims 19, 49, 79, and 109, respectively, is not obvious over Weiss in view of Thearling.

The Applicant respectfully submits that the present invention according to claims 20, 50, 80, and 110 is not obvious over Weiss in view of Thearling for at least the following additional reasons:

Claim 20 recites adding an estimate of a time to migrate the data mining processing task to the at least one other computer system and the estimate of the time to complete the data mining processing task for the at least one other computer system, comparing the estimate of the time to complete the data mining processing task for the computer system with the estimate of the time to complete the data mining processing task for the at least one other computer system, and determining whether the at least one other computer system can complete the data mining processing task being performed on the computer system faster than the computer system. Neither Weiss nor Thearling discloses or suggests this required element. Thus, the combination of Weiss and Thearling still fails to disclose or suggest this required element.

Thus, the present invention, according to claim 20, and according to claims 50, 80, and 110, which are similar to claim 20, is not obvious over Weiss in view of Thearling. Likewise, the present invention, according to claims 21-22, 51-52, 81-82, and 111-112, which depend from claims 20, 50, 80, and 110, respectively, is not obvious over Weiss in view of Thearling.

The Applicant respectfully submits that the present invention according to claims 21, 51, 81, and 111 is not obvious over Weiss in view of Thearling for at least the following additional reasons:

Claim 21 recites transmitting to the at least one other computer system the estimate of the amount of processing that must be performed to complete the data mining processing task and receiving from the at least one other computer system an estimate of a time to complete the data mining processing task for the at least one other computer system. Neither Weiss nor Thearling discloses or suggests this required element. Thus, the combination of Weiss and Thearling still fails to disclose or suggest this required element.

Thus, the present invention, according to claim 21, and according to claims 51, 81, and 111, which are similar to claim 21, is not obvious over Weiss in view of Thearling. Likewise, the present invention, according to claims 22, 52, 82, and 112, which depend from claims 21, 51, 81, and 111, respectively, is not obvious over Weiss in view of Thearling.

The Applicant respectfully submits that the present invention according to claims 22, 52, 82, and 112 is not obvious over Weiss in view of Thearling for at least the following additional reasons:

Claim 22 recites adding an estimate of a time to migrate the data mining processing task to the at least one other computer system and the estimate of the time to complete the data mining processing task for the at least one other computer system, comparing the estimate of the time to complete the data mining processing task for the

computer system with the estimate of the time to complete the data mining processing task for the at least one other computer system, and determining whether the at least one other computer system can complete the data mining processing task being performed on the computer system faster than the computer system. Neither Weiss nor Thearling discloses or suggests this required element. Thus, the combination of Weiss and Thearling still fails to disclose or suggest this required element.

Thus, the present invention, according to claim 22, and according to claims 52, 82, and 112, which are similar to claim 22, is not obvious over Weiss in view of Thearling.

Each of the claims now pending in this application is believed to be in condition for allowance. Accordingly, favorable reconsideration of this case and early issuance of the Notice of Allowance are respectfully requested.

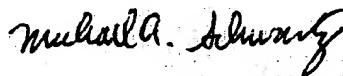
Additional Fees:

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with this application to Deposit Account No. 19-5127 (19111.0024).

Conclusion

In view of the foregoing, all of the Examiner's rejections to the claims are believed to be overcome. The Applicants respectfully request reconsideration and issuance of a Notice of Allowance for all the claims remaining in the application. Should the Examiner feel further communication would facilitate prosecution, he is urged to call the undersigned at the phone number provided below.

Respectfully Submitted,



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